http://www.hoovers.com/railroads/--ID__319--/free-ind-fr-profile-basic.xhtml

RAILROADS

The rail transportation industry includes about 350 companies with combined annual revenue of $50 billion. Major cargo companies include Union Pacific, BNSF Railway, and Norfolk Southern. Amtrak is the sole nationwide passenger rail service. The industry is **highly concentrated**: the 50 largest companies hold nearly 100 percent of the market. The government classifies freight railroads based on annual revenues. Seven line-haul **Class I railroads** operate nationwide on high-density, intercity traffic lanes. Class I carriers comprise just 1 percent of freight railroads but account for over 90 percent of the industry revenue. The 30 regional **Class II railroads** typically operate routes of about 500 miles within two to four states. Over 300 short-line **Class III railroads** haul cargo 250 or fewer miles on local rail lines. Amtrak is included in this industry, but commuter, switching and terminal, and tourist railroads aren't.

Competitive Landscape

Demand is driven by **consumer spending** and **fuel prices**, as high gas prices shift freight transport from trucks to rail. The profitability of individual companies depends on **efficient operations** and **controlling maintenance expenses**. Large companies have advantages in owning substantial miles of railroad track connecting major cities. Small companies can compete effectively by servicing local routes and transporting a wide variety of commodities. The industry is highly **capital-intensive:** average annual revenue per worker for a typical Class I railroad is $250,000.

Railroads compete with trucks, vessels and barges, and pipelines to transport commodities and finished goods. According to the Association of American Railroads (AAR), railroads account for **40 percent of total US freight ton-miles**, the most of any mode of transport, but generate **less than 10 percent of all intercity freight revenues**.

Products, Operations & Technology

Major services are the transport of **commodities**, including coal, crushed rock, and chemicals; **containers of consumer goods**; **automobiles**; and **passengers**. Rail transport of commodities accounts for nearly 80 percent of all railroad revenue. Coal accounts for 40 percent of these commodities by tonnage. Container transport, also known as **intermodal rail traffic**, moves consumer goods to ships and trucks without unloading the freight between modes of travel. Intermodal rail traffic of goods and commodities accounts for over 20 percent of rail transportation revenue. Amtrak, the sole nationwide passenger travel service, is a $2 billion business.

Moving commodities by rail begins at the source of raw materials. Trains typically carry only a single commodity from its origin to the line's terminus. Intermodal rail travel typically begins at port with cranes moving mixed consumer goods in containers from ship to railcar. Most train cargo is transported by diesel-electric locomotives moving about 100 railcars. Heavy freight operations may require up to four locomotives. The trip terminates at a **classification yard**, where cargo is diverted or unloaded, and train cars are uncoupled and either moved to storage tracks or reassembled for a new route. The time required for this final process, known as **terminal dwell,** is an important measure of railroad efficiency. Class I trains spend an average of 24 hours in terminal dwell.

Freight cars come in many forms. **Autoracks** are multi-level cars that transport automobiles. **Well cars** are designed to carry shipping containers and can be double-

stacked. **Tank cars** carry petroleum, chemicals, and gases. **Boxcars** are versatile cars used to transport general freight. **Flatcars** hold loads that are too large to be enclosed in boxcars. **Hoppers** have opening doors on the underside of the car to transport and discharge loose commodities such as coal, grain, ore, and ballast. The average freight car capacity is just over 90 tons and cars typically have a useful life of 20 to 40 years.
Important operating metrics include average line-haul speed or **velocity**, a measure of train efficiency, and **ton-miles**, the movement of one ton a distance of one mile. The average Class I velocity is around 25 miles per hour. **Revenue per ton-mile**, a proxy for rail rates, is a measure of revenue a railroad brings in for its services and averages around 3 to 4 cents. **Revenue ton-miles**, on the other hand, are the total number of ton-miles moved within the industry or by a single company. The railroad industry moves nearly 2 trillion ton-miles annually.
Railroads invest heavily in **infrastructure needs**: steel, concrete, wood, and rock ballast for rail lines; signal cables; new locomotives and rail cars; and switch and cross ties. State governments often subsidize the investment in track infrastructure.
Technological improvements have led to huge productivity gains within the railroad industry. Automated real-time inspection systems detect rail failures; GPS and radio frequency identification (RFID) tags allow for real-time freight tracking. Class I railroads use complex computer workstations and telecommunication networks to efficiently schedule and manage freight traffic.